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Interner Bericht

Massively Parallel Computing in a Production Environment iPSC/860 Installation at KFA Jülich

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Abstract

The Research Centre Jülich installed the first Intel Paragon production system in Europe. Prior to that installation an Intel iPSC/860 system was made available last year to allow users to develop parallel programs for such an architecture. This article describes all aspects of the iPSC/860 installation, such as system access, system administration, operating, user support, and applications. KFA is cooperating with Intel on the evaluation of the Paragon software and the development of necessary tools.

1 Introduction

The Research Centre Jülich (KFA) is the largest federal research center in Germany. It is a center for multi-disciplinary research including solid state physics and materials research, information technology, environmental research and life sciences, energy technology, and fusion research, as well as accelerator and nuclear physics. The Central Institute for Applied Mathematics (ZAM) is responsible for planning, installation, management, and operation of the central computer systems and of the KFA-wide computer networks and communication systems.

ZAM also runs the supercomputer systems for HLRZ (Centre for High Performance Computing) as installed at KFA. HLRZ serves about 150 user groups at universities and research laboratories all over Germany.

The supercomputer systems available at KFA are: CRAY X-MP/416, CRAY Y-MP8/832, iPSC/860, and Paragon XP/S. The iPSC/860 and Paragon are part of a collaboration with Intel with the main goal to introduce massively parallel systems as computing tools in production environments.

Massively parallel systems have been built for several years and were installed mostly in universities and research labs as test beds for research on parallel computing. Due to the enormous computational power needed for a lot of real world applications massively parallel systems attracted also much attention in the user communities of supercomputers. Therefore KFA decided to exploit that new technology and make such a system available as part of its production environment for KFA as well as HLRZ users.